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(54) Mobile phone monitor and remote control system

(57) The mobile phone monitor and remote control system enables users to monitor the mobile phone operation status and remotely control its operation without taking out the mobile phone (10). It has an independent remote control (40) and a message receiving module located in the mobile phone (10), to communicate with the remote control (40)and indicate the mobile phone operation status, such as the number of an incoming call, on a display screen (42) located on the remote control (40). Users may choose to take or pass the call through the remote control function, or take the call with a coupling headset and microphone.

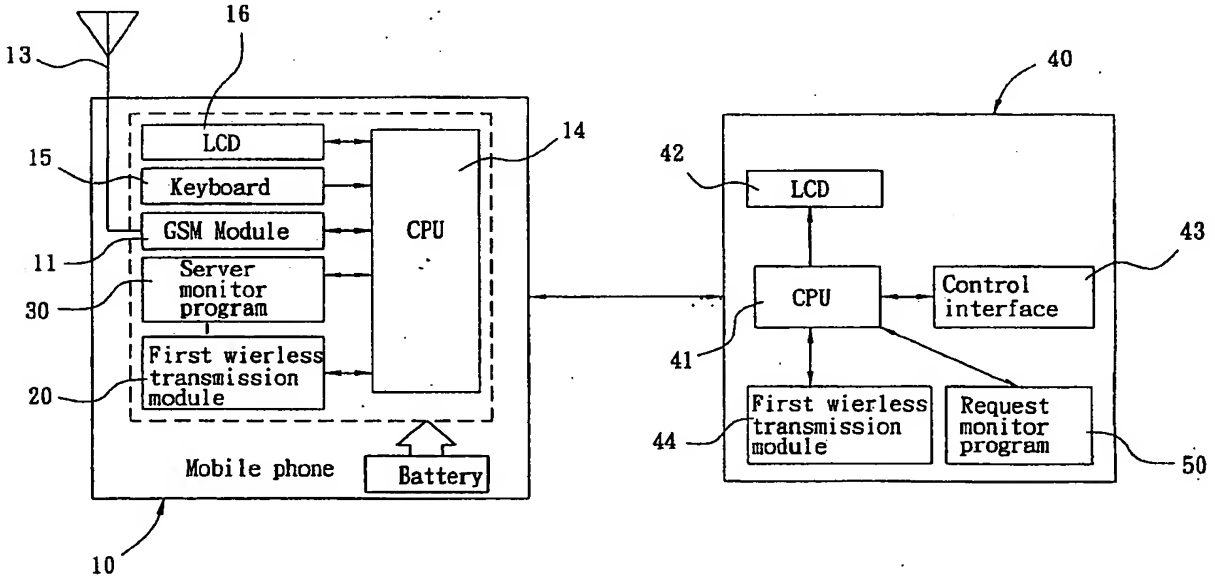

FIG. 1

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Description

FIELD OF THE INVENTION

[0001] This invention relates to a mobile phone monitor and remote control system, and particularly a mobile phone monitor and remote control system that allows users to obtain the mobile phone operation status while the mobile phone is not with them, thus operating the mobile phone in a remote control fashion.

BACKGROUND OF THE INVENTION

[0002] With the rapid development of the mobile phone industry and intense promotion of communication service providers, the mobile phone has achieved great popularity nowadays. Modern mobile phones not only provide the function of transmitting voice or message, as network connections for offering multimedia functions has become an essential function for the new generation of mobile phones. In addition, user-friendliness is an issue many users are keenly concerned about, and this has become a high priority goal that the mobile phone manufacturers are pursuing. For instance, most mobile phones have a headset which enables users to take incoming calls without holding the handset. The headset generally includes an earpiece linking to a microphone or a built-in speaker for users to have conversations without holding the mobile phone.

[0003] Although mobile phones have the headset design and function, when put into practice, there are still some problems. For instance, most mobile phone users place the mobile phone in:

1. handbags;

2. pockets; and

3. hanging on the waistband.

[0004] When there is an incoming call , users usually take the call in one of the following ways :

A. opening the handbag or pocket to fetch the mobile phone, or fetching the mobile phone from the waistband;

B. check the incoming phone number to screen undesirable calls;

C. choose to take or pass the call.

[0005] The action A set forth above has some problems and drawbacks, notably:

1. while fetching the mobile phone, the articles held in the handbag or pocket might be taken out and dropped inadvertently ;

2. the mobile phone could be dropped incidentally and get damaged;

3. unfolding the clothes to retrieve the mobile phone from the waistband looks awkward and unsightly;

4. fetching the mobile phone frequently for taking incoming calls on important occasions is embarrassing; and

5. ringing will consume battery power of the mobile phone and shorten the standby time of the phone.

[0006] While the action A may be avoided by using the headset, the action B of viewing the display screen to screen the incoming call has to be done by taking out the mobile phone.

SUMMARY OF THE INVENTION

[0007] The primary object of the invention is to provide a mobile phone monitor and remote control system that enables users to know the number of the incoming call without taking out the mobile phone, and to remotely control the mobile phone.

[0008] Another object of the invention is to resolve the inconvenient problem of taking incoming calls that occurs with conventional mobile phones, and to provide a monitor and remote control system that enables users to decide to take or pass the incoming call.

[0009] The mobile phone monitor and remote control system according to the invention includes an independent remote controller separate from the mobile phone and a wireless transmission module (such as a bluetooth module or a general wireless radio frequency module) installed in the mobile phone. The remote control provides the function of displaying the phone number and remotely controlling whether to take or pass the call. The wireless transmission module transmits the operation status and related messages of the mobile phone to the remote control. Hence, when there is an incoming call, the user may utilize the remote control to display the incoming phone number to get the caller's identity, then decide whether to take or pass the incoming call, thereby removing the inconvenience of frequently fetching the mobile phone .

[0010] In another preferred embodiment of the invention, the remote control may be designed with ornamental features for matching with users' clothing, as well as offering practical functions.

[0011] The foregoing and additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

FIG. 1 is a system block diagram of a first embodiment of the invention.

FIG. 2 is a process flow of the invention, showing operation processes when the mobile phone receives an incoming call.

FIG. 3 is a process flow of the invention, showing the remote control operation process.

FIG. 4 is a pictorial view of the remote control with an ornament design.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0013] Referring to FIG. 1 for a first embodiment of the system of the invention, a typical mobile phone 10 is provided, which includes all the commonly used features such as a GSM communication module 11, battery 12, antenna 13, CPU 14, keypad 15, and display screen 16. In addition, the following elements for achieving the objects of this invention are also included:

a first wireless transmission module 20 located in the mobile phone 10 for emitting the operation status of the mobile phone 10 and related messages , and receiving operation commands;
a server monitor program 30 installed in the mobile phone 10 for monitoring the mobile phone operation status and controlling the CPU 14 of the mobile phone 10 to proceed with the required processes according to the received operation commands transmitted from the first wireless transmission module 20 ;
a remote control 40 including a microprocessor 41, a display screen 42, a control interface 43 and a second wireless transmission module 44. The second wireless transmission module 44 is for receiving the message transmitted from the first wireless transmission module 20, decoding the message, and forwarding it to the microprocessor 41 for processing; and
a request monitor program 50 installed in the remote control 40 for processing the received messages in the second wireless transmission module 44, and sending coded operation commands from the control interface 43 to the remote control 40 for transmitting to the first wireless transmission module 20 of the mobile phone 10.

[0014] The first wireless transmission module 20 and second wireless transmission module 44 may use the bluetooth technique or a general wireless radio frequency module. Through the server monitor program 30 and request monitor program 50, a client/server-like structure and relationship is established, thereby controlling message transmission between the first wireless transmission module 20 and the second wireless transmission module 44.

[0015] The main function of the server monitor program 30 and first wireless transmission module 20 is to control the mobile phone 10 in order to perform the desired operation when the preset events are taking place. The preset events include sending the related messages (particularly the incoming phone number) to the remote control 40 when the mobile phone 10 receives an incoming call, notifying the user when a call is incoming, displaying the identity of the caller by the incoming phone number on the display screen 42 of the remote control 40, and executing the conversation function, disconnecting, or performing other desired processes upon receiving the user's commands through the remote control 40 or direct operation of the mobile phone 10. Of course, the server monitor program 30 may further convert the caller's phone number to the caller's name by searching through the stored electronic telephone directory built in the mobile phone 10, and displaying the name on the display screen of the remote control 40. Users thus can have full knowledge of the caller's identity before deciding whether to use the control interface 43 of the remote control 40 to command the mobile phone 10 to take the incoming call.

[0016] Of course, there are other preferable embodiments, such as one in which the server monitor program 30 executes an alert operation according to a preset process, and through the remote control 40 alerts the user by displaying an alert message or by ringing a bell.

[0017] Monitoring the conversation status of the mobile phone 10 through the server monitor program 30 and first wireless transmission module 20, processing the incoming call and other main functions are illustrated in FIG. 2. The process includes:

1. waiting for an incoming call while the mobile phone 10 is in an ordinary standby state for monitoring and receiving phone calls;
2. packetting the received message: the mobile phone 10 receives incoming phone call messages, captures the phone number or caller's identity data, and forms a "receiving highlight message" packet;
3. sending the "receiving highlight message" to the second wireless transmission module 44;
4. waiting for operation commands: this is a standby state, and the mobile phone 10 is ready to receive commands from the remote control 40 or keypad 15 of the mobile phone 10 to take the incoming call, disconnect, or perform other desired processes ; and
5. executing operation commands after receiving the commands from the remote control 40 or directly from the mobile phone 10, such as taking the call,

disconecting , or transferring the call , and then returning to the first step of "waiting for the incoming call". If the mobile phone 10 is linked to a headset (such as an earpiece and microphone), the user may take the incoming call directly without fetching the mobile phone. This may further improve convenience.

[0018] FIG. 3 illustrates the major functions and operation contents of the request monitor program 50 and remote controller 40, which includes:

1. monitoring the incoming call status of the mobile phone 10;
2. displaying the incoming call message: when there is an incoming call, the second wireless transmission module 44 will receive the "receiving highlight message" sent out from the first wireless transmission module 20 of the mobile phone 10, and the caller's phone number or identity information contained in the packet will be displayed on the display screen 42 of the remote control 40; and
3. sending out operation commands: when the user decides to take the incoming call or disconnect through the control interface 43 of the remote controller 40, by pressing the take call button 430 or the cutoff button 431, the second wireless transmission module 44 transmits to the mobile phone 10 and finally returns to the first stage of "monitoring the incoming call status of the mobile phone 10".

[0019] In the preferred embodiments, the remote control 40 may be designed to have an ornamental appearance, so that it may serve as an ornament for hanging on the user's clothing or personal articles (such as a backpack or handbag) thereby offering a decoration effect in addition to its practical function.

[0020] By means of the remote control 40 described above, and through the display screen 42 on the remote control 40, users may see the displayed information without fetching the mobile phone 10, and decide whether to take or disconnect the incoming call by using the remote control 40.

[0021] FIG. 4 illustrates the remote control 40 with an ornamental exterior design for hanging on the user's clothing or personal articles (such as a backpack or handbag) to double as a decorative article in addition to its practical function.

[0022] While the preferred embodiments of the invention have been set forth for purposes of disclosure, modifications of the disclosed embodiments of the invention as well as other embodiments thereof may occur to those skilled in the art. Accordingly, the appended claims are intended to cover all embodiments that do not depart from the spirit and scope of the invention.

Claims

1. A mobile phone monitor and remote control system for monitoring mobile phone operation status and performing remote control operation without taking the mobile phone, comprising:

   a first wireless transmission module installed in the mobile phone for emitting the mobile phone operation status and related messages in a wireless fashion and receiving operation commands from outside;
   a server monitor program installed in the mobile phone for monitoring the mobile phone operation status and controlling the mobile phone to proceed a corresponding process when a preset event taking place;
   a remote controller including a display screen, a control interface and a second wireless transmission module which receives messages from the first wireless transmission module and displays the message on the display screen and transmits operation commands issued by the control interface to the first wireless transmission module for remotely controlling the mobile phone; and
   a request monitor program installed in the remote controller for processing the messages received by the second wireless transmission module.

2. The mobile phone monitor and remote control system of claim 1, wherein the server monitor program transmits incoming phone number to the second wireless transmission module through the first wireless transmission module when the mobile phone receives the incoming phone and displaying the phone number on the display screen of the remote controller.

3. The mobile phone monitor and remote control system of claim 1, wherein the server monitor program transmits caller identity data to the second wireless transmission module through the first wireless transmission module when the mobile phone receives an incoming phone and displays the identity data on the display screen of the remote controller.

4. The mobile phone monitor and remote control system of claim 1, wherein the first wireless transmission module and second wireless transmission module are bluetooth modules which employ bluetooth technology.

5. The mobile phone monitor and remote control system of claim 1, wherein the first wireless transmission module and second wireless transmission module are wireless radio frequency modules.

6. The mobile phone monitor and remote control system of claim 1, wherein the control interface of the remote controller includes a taking-call button for taking phone call and a cutoff-call button for passing phone call.

7. The mobile phone monitor and remote control system of claim 1, wherein the remote controller has an ornamental exterior shape for serving as an ornament to hang on an user's body.

8. The mobile phone monitor and remote control system of claim 1 further having a headset linked to the mobile phone, the headset including an earpiece and a microphone.

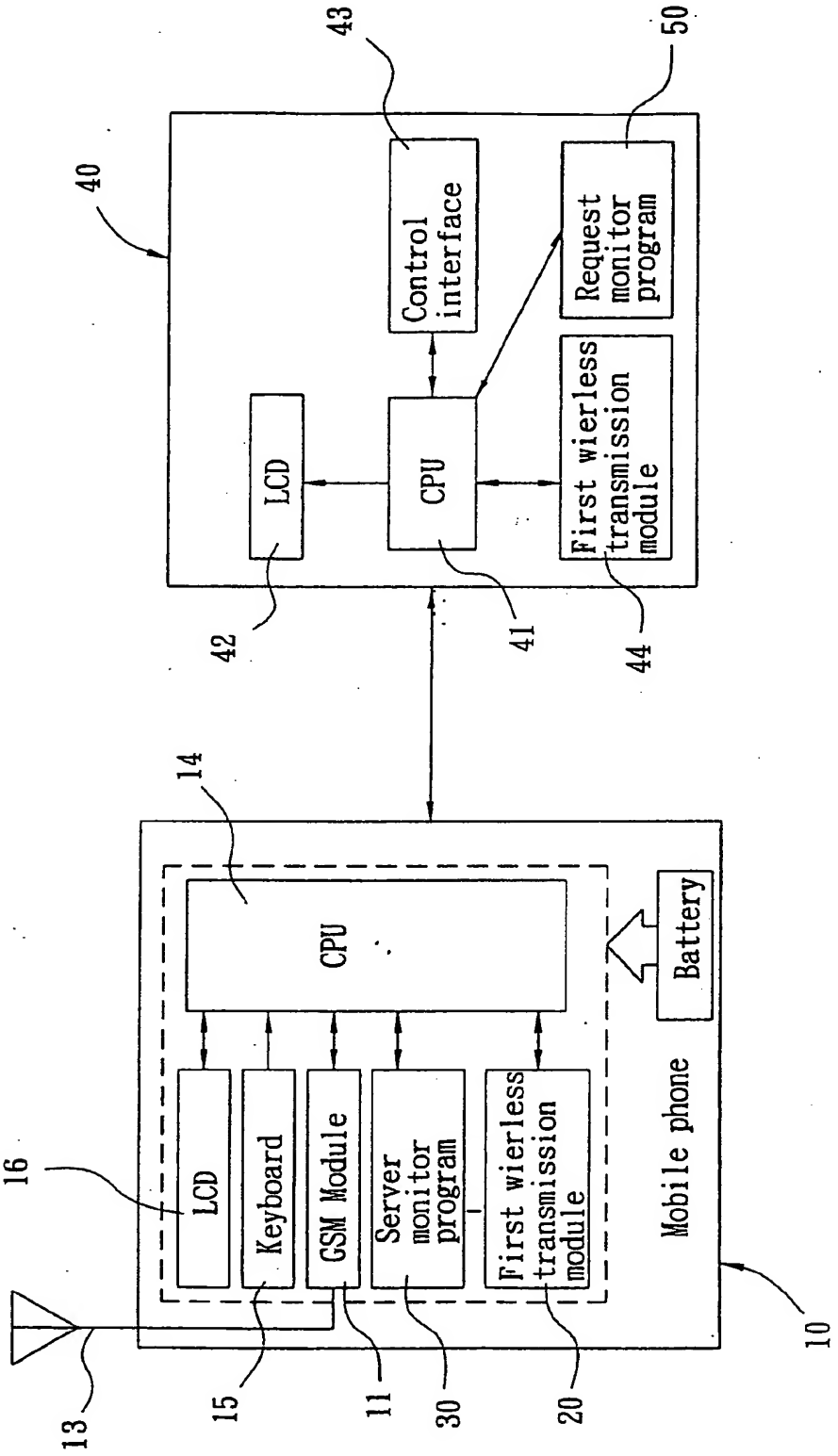
40
43
Control interface
50
Request monitor program
LCD
CPU
First wierless transmission module
42
41
44
14
CPU
Battery
16
LCD
Keyboard
GSM Module
Server monitor program
First wierless transmission module
Mobile phone
10
13
15
11
30
20

FIG. 1

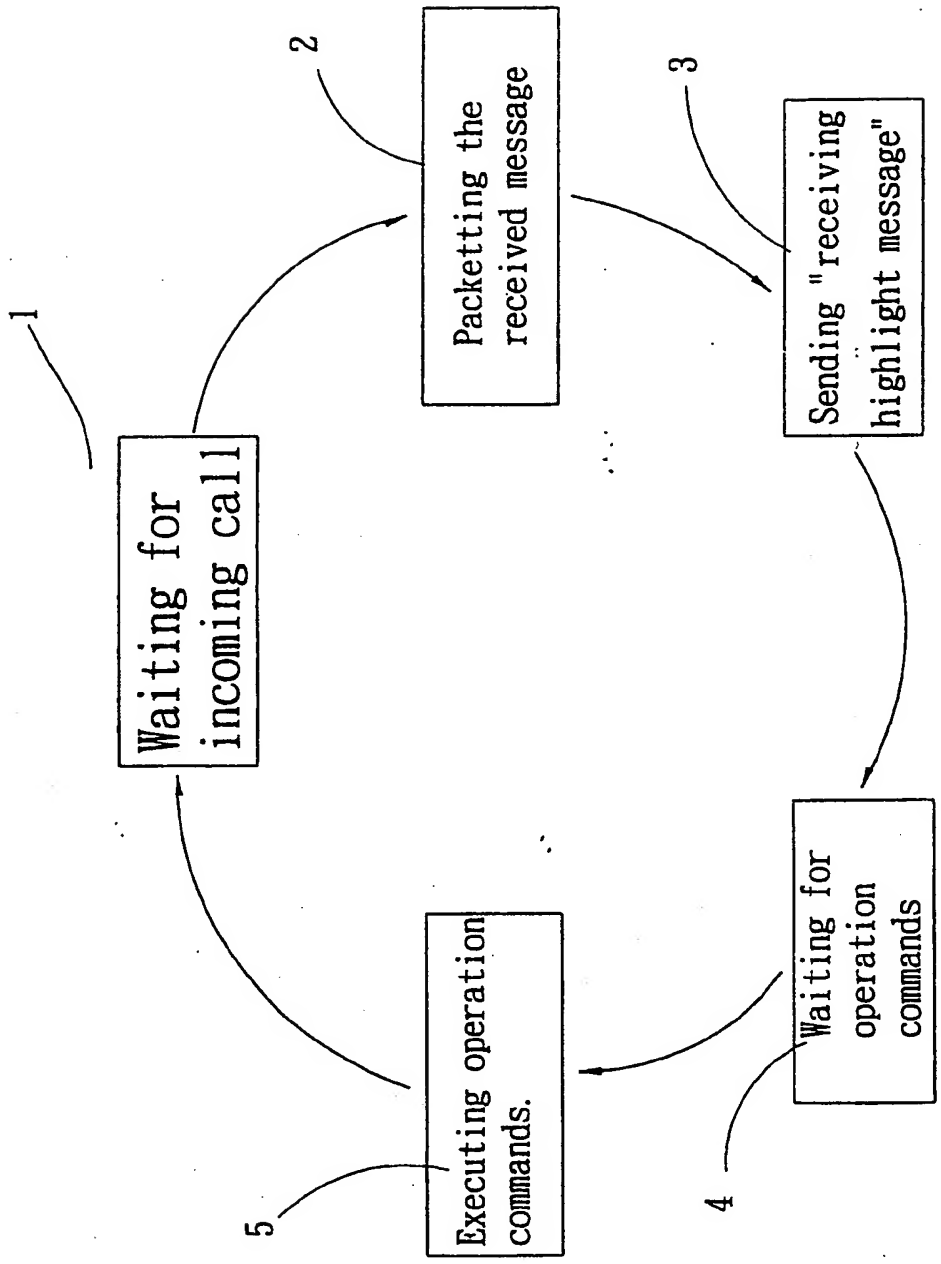
1
Waiting for incoming call
2
Packetting the received message
3
Sending "receiving highlight message"
4
Waiting for operation commands
5
Executing operation commands.

FIG. 2

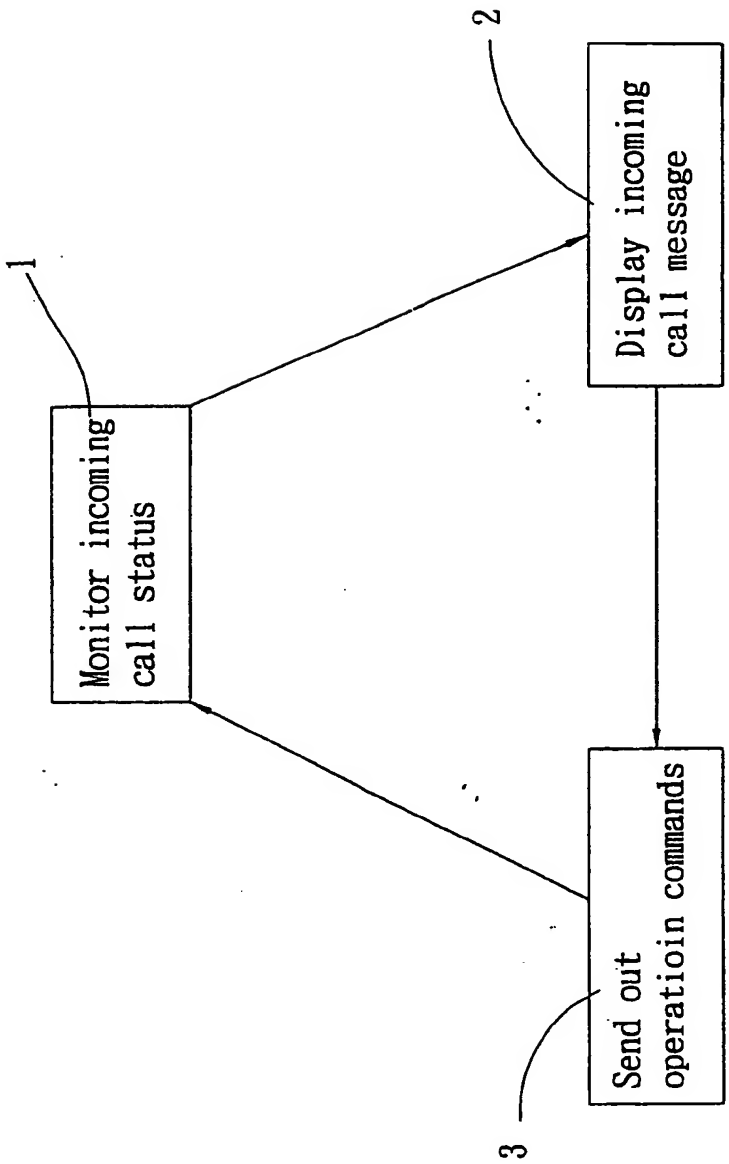
1
Monitor incoming call status
2
Display incoming call message
3
Send out operatioin commands

FIG. 3

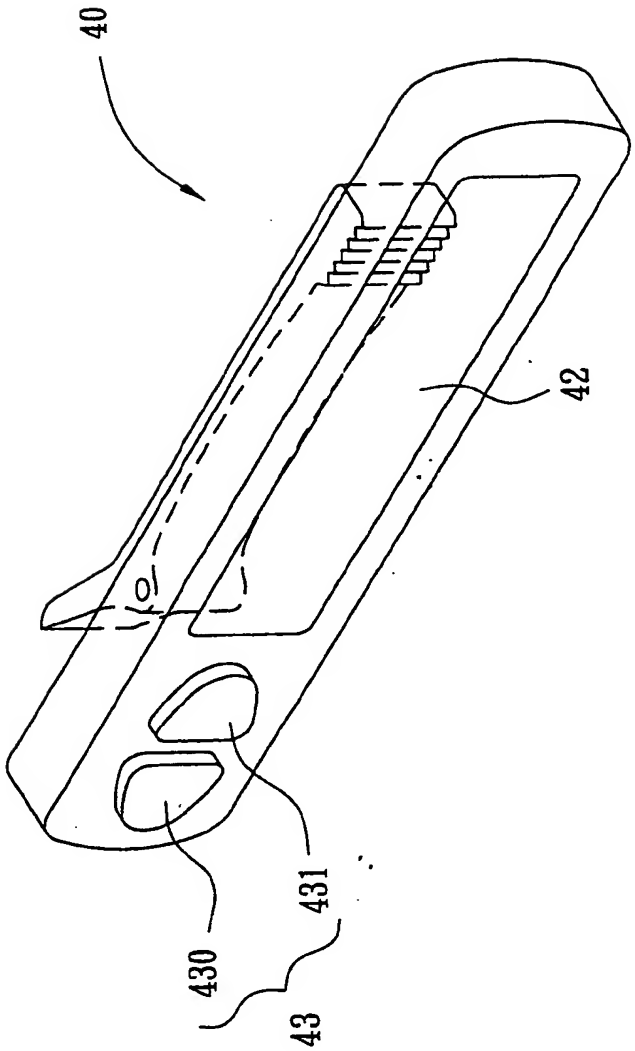

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 4667

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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

H04M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	15 November 2001	Santacroce, J

CATEGORY OF CITED DOCUMENTS

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